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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/629,247	07/29/2003	Richard E. Bare	P2003J066	6576

7590 02/14/2005

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EXAMINER	
PRINCE, FRED G	

ART UNIT	PAPER NUMBER
1724	

DATE MAILED: 02/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/629,247	BARE ET AL.	
	Examiner	Art Unit	
	Fred Prince	1724	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 December 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-40* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-40* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-9, 11-13, 22-28, and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsumura et al.

Tsumura et al. disclose flowing wastewater in the absence of any additional carbon source into a treatment basin (2a, 2b), mixing the wastewater (col. 5, lines 52-53), introducing oxygen for a period within the specified time range (col. 5, lines 50-52), stopping oxygen introduction for a period within the specified time range (col. 5, lines 66-68), repeating the steps a plurality of times (abstract), and clarifying the water and returning sludge to the basin (Fig.1), wherein the temperature is within the recited range (Table 1). Tsumura do not disclose treating refinery wastewater having the recited PO_4 levels.

It is submitted that it is well known in the art that refinery wastewater contains nitrogen and accordingly, it would have been readily obvious to the skilled artisan to use the process of Tsumura et al. to treat refinery wastewater in order to, for example, remove nitrogen from the wastewater.

It is well within the purview of the skilled artisan to treat water containing PO_4 at the recited level using intermittent aeration in order to reduce the amount of phosphate

in the water. Accordingly, it would have been readily obvious for the skilled artisan to have treated wastewater at the specified PO_4 content in order to reduce the amount of phosphate in the water, as known in the art.

3. Claims 10 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsumura et al. in view of Hiatt et al.

Tsumura et al. is described above. Tsumura et al. do not explicitly disclose the recited pH range.

Hiatt et al. disclose that nitrification and denitrification cause pH fluctuations and that maintaining wastewater in the specified pH range facilitates proper treatment of the wastewater (col. 7, lines 17-35).

It would have been readily obvious for the skilled artisan to have modified the method of Tsumura et al. by using a pH within the range in order to facilitates proper treatment of the wastewater, as suggested by Hiatt et al.

4. Claims 14-21 and 31-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsumura et al.

Tsumura et al. is described above. Tsumura et al. do not explicitly disclose the recited time range.

It is conventional in the art to use the recited on/off time duration in order to ensure proper conditions for nitrification/denitrification reactions in a reactor in which both reactions take place (see, for example, US Pat No 6,616,843 to Behmann et al.). Accordingly, it would have been obvious for the skilled artisan to have modified the method of Tsumura et al. such that it includes any one of the recited on/off time periods

in order to ensure proper conditions for nitrification/denitrification reactions in a reactor in which both reactions take place, as known in the art.

Response to Arguments

5. Applicant's arguments filed December 13, 2004 have been fully considered but they are not persuasive.

Applicant asserts that the instant invention for treating of refinery wastewater is patentably distinguishable over Tsumura et al. since Tsumura et al. is directed toward treatment of sewage. This argument has been noted and carefully considered, but is not deemed to be persuasive of patentability. It is pointed out that both sewage wastewater and refinery wastewater would be expected to contain nitrogen, and it is known that periods of aeration and non-aeration act to break down and degrade nitrogen in the wastewater. Accordingly, it is not seen that modifying the process of Tsumura et al. such that it includes treating refinery wastewater, a wastewater known to contain nitrogen, involves an inventive step. In any event, the record does not show, e.g., by comparative test data, that Applicant is able to obtain any new and unexpected result over that of the process disclosed by Tsumura et al.; and absent such a showing, treating a refinery wastewater using the process principles taught by Tsumura et al. is deemed to be an obvious matter of choice in design, insufficient to patentably distinguish the claims over the prior art.

Applicant asserts that the dependent claims are allowable because the independent claims are allegedly allowable. Since the independent claims are not

patentable for the reasons provided above, Applicant's assertion is not persuasive of patentability.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. References are cited of interest to show the state of the art.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fred Prince whose telephone number is (571) 272-1165. The examiner can normally be reached on Monday-Thursday, 6:30-4:00; alt. Fridays 6:30-3:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duane Smith can be reached on (571) 272-1166. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Fred Prince
Primary Examiner
Art Unit 1724

fgp
2/10/05